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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/066,359	08/18/1998	RIKU PIRHONEN	PMS252337T29	8724

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EXAMINER

NGUYEN, TOAN D

ART UNIT PAPER NUMBER

2663

DATE MAILED: 01/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/066,359

Applicant(s)

PIRHONEN ET AL.

Examiner

Toan D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/292001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-18 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Application/Control Number: 09/066,359

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DETAILED ACTION

Claim Rejections - 35 U.S.C. § 103

1. The following is a quotation of 35 U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tzukerman et al. (U.S. Patent 5,438,590) in view of Seshardi et al. (U.S. Patent 5,208,816) and further in view of Malkamaki et al. (U.S. Patent 5,563,895).

For claim 1, Tzukerman et al. disclose transmitting and receiving apparatus and method including punctured convolutional encoding and decoding comprises:

carrying out convolutional coding for said blocks with a code rate of $\frac{1}{2}$ by using GSM convolutional coding polynomes (figure 1, col. 9 line 68), and

puncturing the bits obtained by deleting bits from each block so that blocks containing no more than 456 bits will be obtained (col. 10 lines 4-5).

Tzukerman et al. do not disclose blocks containing no more than 456 bits will be obtained. In an analogous art, Malkamaki et al. disclose blocks containing no more than 456 bits will be obtained (figure 1, col. 1 line 66 to col. 2 line 1). One skilled in the art would have recognized in the convolution coding 3b the speech frame redundance is increased (col. 1 lines 66-67) to use teaching of Malkamaki et al. in the system of Tzukerman et al. It would have been obvious to one of ordinary skill in the art at the time invention, to use the combined digital mobile radio communication system as taught by Malkamaki et al. in transmitting and receiving apparatus and method including punctured convolutional encoding and decoding of Tzukerman et al.

Tzukerman et al. in view of Malkamaki et al. do not disclose grouping bits to be transmitted in blocks having the minimum size of 288 bits. In an analogous art, Seshardi et al. disclose grouping bits to be transmitted in blocks (col. 1 lines 24-25). One skilled in the art would have recognized the best transmission results could be achieved by choosing the blocks size to use teaching of Seshardi et al. in the system of Tzukerman et al. It would have been obvious to one of ordinary skill in the art at the time invention, to use the combined generalized Viterbi encoding algorithms as taught by Seshardi et al. in transmitting and receiving apparatus and method including punctured convolutional encoding and decoding of Tzukerman et al.

3. Claims 3 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Tzukerman et al. (U.S. Patent 5,438,590) in view of Seshardi et al. (U.S. Patent 5,208,816) and Malkamaki et al. (U.S. Patent 5,563,895) and further in view of Koetje Anno et al. (EP 0660558A2).

For claim 3, the claim is rejected as discussed in claim 1. Therefore it is rejected in same rational. Tzukerman et al. in view of Seshardi et al. and Malkamaki et al. do not disclose inserting 4 tails bits to the blocks in claim 3. In an analogous art, Koetje Anno et al. disclose inserting 4 tails bits to the blocks (figure 3, col. 6 lines 8-11). One skilled in the art would have recognized the process of tailing (col. 6 lines 13-19) to use teaching of Koetje Anno et al. in the system of Tzukerman et al.

It would have been obvious to one of ordinary skill in the art at the time invention, to use the combined interleaving method and apparatus for digital data transmission in GSM-networks as taught by Koetje Anno et al. in transmitting and receiving apparatus and method including punctured convolutional encoding and decoding of Tzukerman et al.

For claim 9, Koetje Anno et al. disclose each information bit is inverted prior to the transfer and deinverted after the transfer (figure 2, col. 4 line 54 and col. 5 lines 43-45).

For claim 10, Koetje Anno et al. disclose the information to be transmitted is transfer in the transfer system by generating a transfer frame whose total length is 640 bits and the information transferred by which is applied to a channel coder as two blocks with the length of 290 bits (figure 2, col. 4 line 46 to col. 5 line 24).

For claim 11, Koetje Anno et al. disclose an identifier is inserted to both of the blocks that indicates whether the first or the second block of the frame is in question (see figure 10, col. 10 lines 30-44, and col. 14 lines 51-55).

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4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tzukerman et al. (U.S. Patent 5,438,590) in view of Seshardi et al. (U.S. Patent 5,208,816); Malkamaki et al. (U.S. Patent 5,563,895) and further view of Kuroda et al (U.S. Patent 5,432,800).

For claim 4, Tzukerman et al. in view of Seshardi et al. and Malkamaki et al. do not disclose the information to be transmitted is transferred in the transfer system by generating one frame from two transcoding frames by using a part of synchronization and control bit positions of the latter frame in the information transfer. In an analogous art, Kuroda et al. disclose the information to be transmitted is transferred in the transfer system by generating one frame from two transcoding frames by using a part of synchronization and control bit positions of the latter frame in the information transfer (col. 3 lines 5-30). One skilled in the art would have recognized a frame signal containing the plural data block signals and the parity block signals is generated, for thereby constituting a frame signal to be sent out (col. 3 lines 9-12) to use teaching of Kuroda et al. in the system of Tzukerman et al.

It would have been obvious to the person of ordinary skill in the art at the time of the invention to the combined method and apparatus for transmission and reception of information signals as taught by Kuroda et al in transmitting and receiving apparatus and method including punctured convolutional encoding and decoding of Tzukerman et al.

5. Claims 5-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzukerman et al. (U.S. Patent 5,438,590) in view of Seshardi et al. (U.S. Patent 5,208,816); Malkamaki et al. (U.S. Patent 5,563,895); Koetje Anno et al. (EP 0660558A2) and further view of Bach et al. (U.S. Patent 5,475,686).

For claims 5 and 6, Tzukerman et al. in view of Seshardi et al.; Malkamaki et al. and Koetje Anno et al. do not disclose the information to be transmitted is transferred in the transfer system by generating a transcoding frame whose first two octets form a synchronization pattern that consists of zeros. In an analogous art, Bach et al. disclose the information to be transmitted is transferred in the transfer system by generating a transcoding frame whose first two octets form a synchronization pattern that consists of zeros (figure 4, col. 3 lines 36-40). One skilled in the art would have recognized such system requires a minimum number of bits necessary for frame synchronization (col. 3 lines 39-40) to use teaching of Bach et al. in Tzukerman et al.

It would have been obvious to one of ordinary skill in the art at the time invention, to use the combined method and apparatus for transferring data in a communication system as taught by Bach et al. in transmitting and receiving apparatus and method including punctured convolutional encoding and decoding of Tzukerman et al.

For claim 8, Bach et al. disclose the information to be transferred in modified so that the bit sequences comprised by the information differ from the synchronization sequences (col. 2 lines 41-47).

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tzukerman et al. (U.S. Patent 5,438,590) in view of Seshardi et al. (U.S. Patent 5,208,816); Malkamaki et al. (U.S. Patent 5,563,895); Koetje Anno et al. (EP 0660558A2); Bach et al. (U.S. Patent 5,475,686) and further view of Kuroda et al (U.S. Patent 5,432,800).

For claim 7, Tzukerman et al. in view of Seshardi et al.; Malkamaki et al.; Koetje Anno et al. and Bach et al. do not disclose the CRC value thus obtained is transferred by using spare control bits, and that the CRC value is utilized in synchronizing the transcoding frame. In an

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analogous art, Kuroda et al. disclose the CRC value thus obtained is transferred by using spare control bits, and that the CRC value is utilized in synchronizing the transcoding frame (figure 2, col. 7 lines 6-12 and col. 8 lines 24-38). One skilled in the art would have recognized the CRC code for the purpose of detecting an overlook or undetected error of the code (col. 7 lines 10-12) to use teaching of Kuroda et al. in the system of Tzukerman et al.

It would have been obvious to the person of ordinary skill in the art at the time of the invention to the combined method and apparatus for transmission and reception of information signals as taught by Kuroda et al in transmitting and receiving apparatus and method including punctured convolutional encoding and decoding of Tzukerman et al.

7. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzukerman et al. (U.S. Patent 5,438,590) in view of Seshardi et al. (U.S. Patent 5,208,816); Malkamaki et al. (U.S. Patent 5,563,895); Koetje Anno et al. (EP 0660558A2) and further view of Kuroda et al (U.S. Patent 5,432,800).

For claim 12, Koetje Anno et al. in view of Tzukerman et al.; Seshardi et al. and Malkamaki et al. disclose the block identifier is in predetermined position in the block (col. 14 lines 51-55). Koetje Anno et al. do not disclose the identifier of the second block is formed by inverting the identifier of the first block. In an analogous art, Kuroda et al. disclose the identifier of the second block is formed by inverting the identifier of the first block (col. 7 lines 56-60). One skilled in the art would have recognized the data block or the parity block can be made by making use the block synchronizing code affixed at the start of each block, whereby possibility of the parity block being erroneous taken for as the data block in the decoding can positively be prevented (col. 8 lines 5-12) to use teaching of Kuroda et al. in the system of Tzukerman et al.

It would have been obvious to the person of ordinary skill in the art at the time of the invention to the combined method and apparatus for transmission and reception of information signals as taught by Kuroda et al in transmitting and receiving apparatus and method including punctured convolutional encoding and decoding of Tzukerman et al.

For claims 13-16, Kuroda et al disclose the first bits of both frames are used for transferring supplementary information over the air interface (see figure 4, col. 9 line 65 to col. 10 line 17).

8. Claim 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzukerman et al. (U.S. Patent 5,438,590) in view of Seshardi et al. (U.S. Patent 5,208,816); Malkamaki et al. (U.S. Patent 5,563,895); Koetje Anno et al. (EP 0660558A2) and further view of Bach et al. (U.S. Patent 5,475,686).

For claims 17 and 18, Tzukerman et al. in view of Seshardi et al; Malkamaki et al.; Koetje Anno et al. do not disclose the transfer frame is generated at a network interworking unit and the transfer frame comprises a radio link protocol frame. In an analogous art, Bach et al. disclose the transfer frame is generated at a network interworking unit (col. 2 lines 66-67), and the transfer frame comprises a radio link protocol frame (col. 3 lines 16-27).

One skilled in the art would have recognized line interface cards compute the worst case delay of a DS0 to its cell then find the longest delay for the corresponding megastream connected to its neighbors (col. 4 lines 39-41) to use teaching of Bach et al. in the system of Tzukerman et al. It would have been obvious to one of ordinary skill in the art at the time invention, to use the combined method and apparatus for transferring data in a communication system as taught by

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Bach et al. in transmitting and receiving apparatus and method including punctured convolutional encoding and decoding of Tzukerman et al.

Objection To claims, Allowable Subject Matter

9. Claims 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments filed on October 29, 2001 have been fully considered, but are moot in view of new ground(s) of rejection.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D Nguyen whose telephone number is 703-305-0140. The examiner can normally be reached on Monday- Friday (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

TN

T.N.



HUY D. VU
PRIMARY EXAMINER